

Homeland Security Effects on S&T in the US



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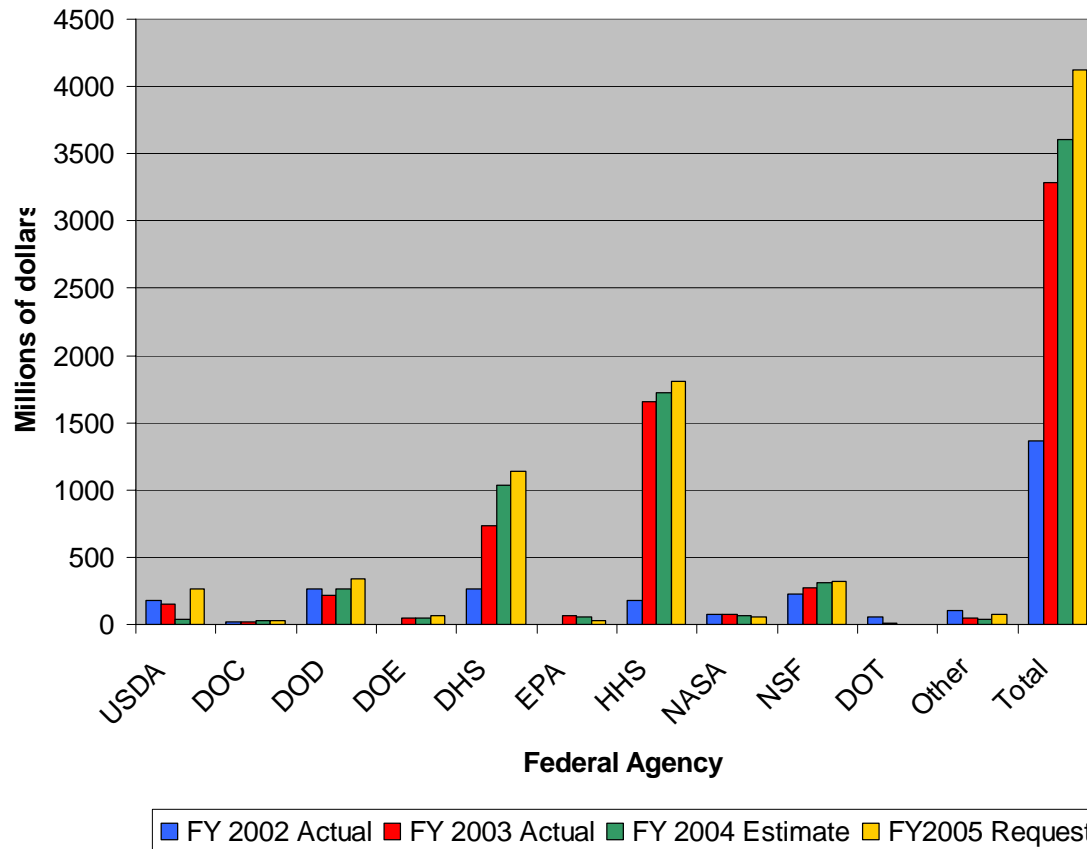
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Homeland Security R&D

- Federal Government R&D
- Department of Homeland Security R&D
- Market- (or “Pseudo-Market-”) Driven R&D
- Other Effects on Science

Federal Homeland Security R&D

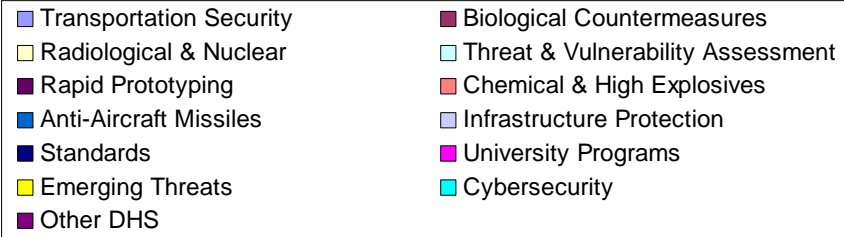
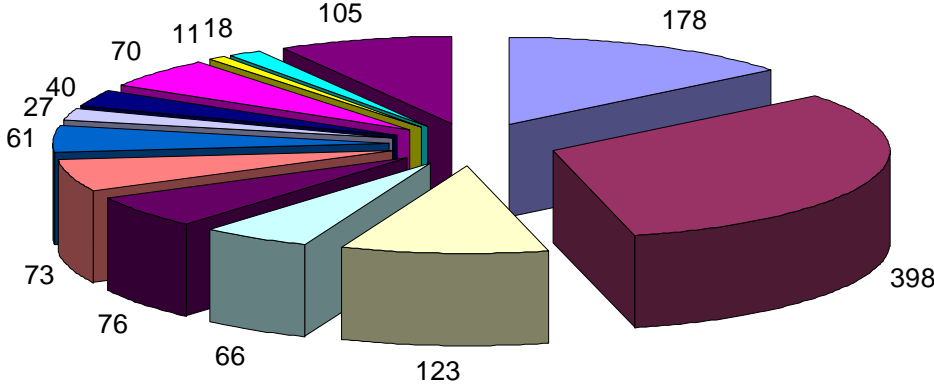


Source: AAAS Report XXIX, Research and Development FY2005, w/ OMB data

Department of Homeland Security R&D

- Department created March 2003 with FY 2003 budget of \$31.2 billion and 180,000 employees
- Combined 22 agencies (several of which did R&D)
- R&D was one of the major growth areas (organizationally and monetarily)
- FY05 budget request \$40.2 billion; \$1.1 billion R&D

Department of Homeland Security R&D (FY 2005 Appropriation; \$1243 M)



Other Federal Actions Intended to Motivate Homeland Security R&D

- Project BioShield (...plus BioWatch)
 - \$885 M FY 2004; \$2528 M FY 2005 (request)
 - Program to stimulate market in countermeasures to biological attack
 - Intention is to motivate industry to invest in R&D; now limited to 7-year horizon
- Safety Act
 - Provides some liability protections for designated or certified homeland security products
 - Likely to stimulate private sector R&D, but on even shorter timescale

Department of Homeland Security University Centers of Excellence

- Legislative requirement to establish “coordinated, university-based system to enhance the Nation’s homeland security,”
- First center (\$12 M; 3 years) awarded 11/2003 to USC for “Risk and Economic Analysis of Terrorism Events”
- Second Center to Texas A&M for agroterrorism centers (\$12M; 3yrs)
- University of Minnesota for Food Protection and Defense (\$15M; 3yrs)
- Other key topics: behavioral research on terrorism and countermeasures; public safety technology transfer; R&D for needed response techniques
- FY2005 budget request: \$30 M (down from \$60M in 2004)
- Scholars and Fellows (82 S/ 92 F)

National Institutes of Health Regional/National Centers

- Regional Centers of Excellence for Biodefense and Emerging Infectious Diseases (consortia)
 - 8 awarded September 2003; \$350 M total over 5 years
- Regional Biocontainment Laboratories
 - BSL-3 laboratory facilities
 - 9 awarded September 2003; \$7 - \$21M each
- National Biocontainment Laboratories
 - BSL-4 laboratory facilities
 - 2 awarded September 2003; \$120 M each
- Cooperative Centers for Translational Research on Human Immunology and Biodefense
 - 5 awarded September 2003; \$85 M total over 4.5 years

Effects on How Science is Done

- Concern over losing technology to adversaries not new
 - Similar issues during Cold War triggered restrictive policies, giving rise in turn to Presidential Directive NSDD-189 affirming importance of openness of fundamental technical research.
 - New times, new technologies, and new vulnerabilities mandate a fresh look, but the answer is likely the same the same
- Concern over terrorist penetration of borders is new
 - Students and scholars face special scrutiny, but changes in visa system affect all visitors and have significant consequences.
- Biological research subject to special measures

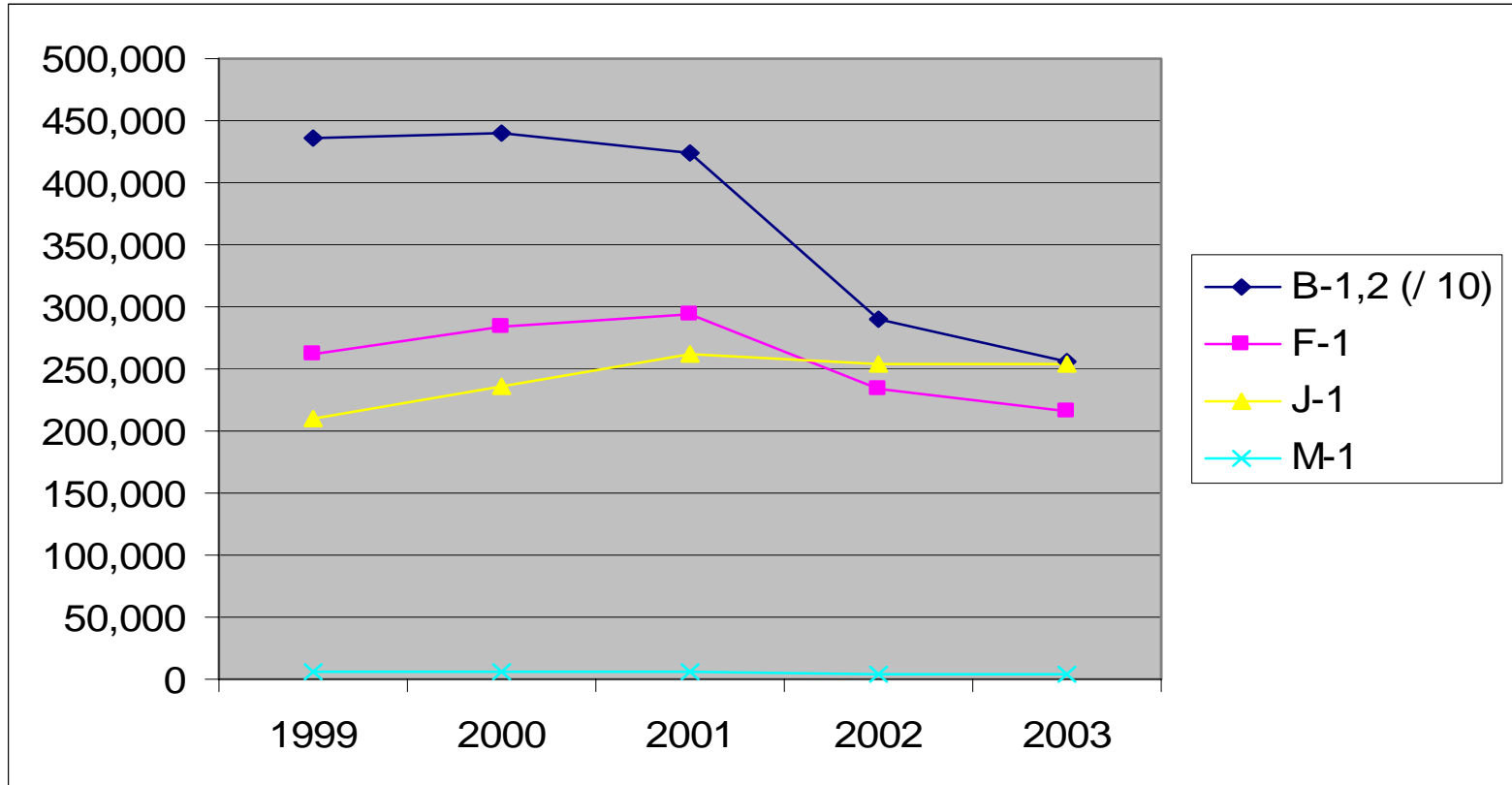
“Troublesome Clauses”

- Cropping up on university research contracts
 - Regarding participation by foreign nationals
 - Regarding prior review of publications
- Problematic from university perspective
 - Apparent inconsistency with NSDD-189
 - Time-consuming to negotiate
 - Can threaten export control exemptions for fundamental research
- Not a new issue

Harder to Enter the United States

- Numerous measures have impeded visitor entry
- Students face extra scrutiny
- Foreign student enrollments dropping
- Visa applications and awards have dropped

Visa Awards (1999-2003)



Science/Security Issues in Biology

- “Select agent” regulations
 - New controls on possession
 - New lab security measures
 - Personnel controls
- Governance of Research
 - Publishers’ Statement
 - NAS “Fink Committee”
 - National Science Advisory Board for Biosecurity